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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.		
10/735,725	12/16/2003	Tsunenori Yamamoto	503.39221CX1	3672		
20457	7590	04/15/2009	EXAMINER			
ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-3873				PIZIALI, JEFFREY J		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/735,725	YAMAMOTO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jeff Piziali	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 23 January 2009 and 17 April 2008.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-20,24 and 25 is/are pending in the application.
- 4a) Of the above claim(s) 3,6-20,24 and 25 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1,2,4 and 5 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 16 December 2003 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. 09/695,174.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ .  | 6) <input type="checkbox"/> Other: _____ .                        |

**DETAILED ACTION**

***Priority***

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

The certified copy has been filed in parent *Application No. 09/695,174*, filed on 25 October 2000.

***Drawings***

2. The drawings have not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the figures.

***Specification***

3. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Election/Restrictions***

4. Applicant's election with traverse of "*Species 1; Embodiment 1; Figs. 1-2 and 4-7; including at least claims 1-2, 4-5 and 7-8*" in the reply filed on 23 January 2009 (see page 2) is acknowledged.

The traversal is on the ground(s) that "*As no serious burden has been, or could be, shown, examination of the entire application is required in accordance with the controlling provisions of MPEP '803*" (see page 2 of the election filed on 23 January 2009).

This is not found persuasive.

There is an examination and search burden for these patentably distinct species due to their mutually exclusive characteristics.

The species require a different field of search (e.g., searching different classes/subclasses or electronic resources, or employing different search queries); and/or the prior art applicable to one species would not likely be applicable to another species; and/or the species are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph.

The Applicant does not dispute any of the above reasons (provided in the restriction requirement mailed on 24 July 2008) for why an examination and search burden exists.

The Applicant alleges, "*all claims have already been extensively searched and examined already*" (see page 2 of the election filed on 23 January 2009).

However, the subject matter of the claims, as amended on 17 April 2008, has not been searched or examined in any previous Office action.

The 17 April 2008 amendment added the hitherto unexamined subject matter, "*illumination control means, responsive to an overshoot drive resulting in a transmittance level exceeding a predetermined designated level, for dynamically controlling an illumination start time and an illumination 'on' time of the illumination unit so that a time integral value of a transmission factor for an overshoot-frame in which the transmission factor is changed due to the overshoot drive, is substantially equal to a time integral value of a transmission factor for a non-overshoot frame in which the transmission reaches a designated level and stays in a stable state*" to all three previously pending independent claims 1, 11, and 24.

The 17 April 2008 amendment also added brand new claim 25 to the claim listing.

37 CFR 1.142(a) explains that a restriction requirement "*may be made at any time before final action.*"

In the instant case, a Request for Continued Examination was filed on 31 October 2008.

5. As noted above, the Applicant alleges claims 7 and 8 read on elected Species 1 [*e.g., see figs. 1, 2, and 4-7; and page 7, line 6 - page 13, line 21 of the specification*]. The examiner respectfully disagrees.

When the examiner informed the Applicant (in the 23 December 2008 Notice) of the nonelected subject matter of claims 7 and 8, the Applicant responded, "*The 23 December 2008 Communication indicates that the Examiner has a difference of opinion as to the claims readable on the elected species. Applicant respectfully disagrees with such Examiner opinion. In the event*

*that the Examiner's opinion continues that claims 7-8 are not readable on the elected species, the Examiner should examine the claims which he feels are readable on the elected species, while noting that certain ones of the claims (e.g., claims 7-8) were not considered or examined by the Examiner as not being directed (in the Examiner's opinion) to the elected species" (see pages 2-3 of the Election filed on 23 January 2009).*

Claims 7-8 state, "**the illumination start time and the illumination 'on' time of the illumination areas of the illumination unit are changed adaptively** and determined so as to be average values weighted with a number of display data to be displayed at an area among values dependent on the individual display data according to the response of the liquid crystal display part after data emphasis and conversion."

Such subject matter reads on non-elected Species 2 [e.g., see fig. 8; and page 13, line 22 - page 15, line 5 of the specification].

Page 14, lines 11-16 of the Specification states, "**On the other hand, unlike embodiment 1 in which the illumination start time and the illumination 'on' time are adjusted so as to be equal to the average values of the optimum values for all the individual gradations to be covered, the average value of the individual gradation weighted with the number of pixels displayed for the individual areas is estimated in real time, and the illumination start time and the illumination 'on' time are controlled adaptively.**"

Therefore, the examiner considers only **claims 1, 2, 4, and 5** as reading on elected Species 1 [e.g., see figs. 1, 2, and 4-7; and page 7, line 6 - page 13, line 21 of the specification].

The restriction requirement is still deemed proper and is therefore made FINAL.

6. ***Claims 3, 6-20, 24, and 25 are withdrawn*** from further consideration pursuant to 37 CFR 1.142(b), as being drawn to nonelected species, there being no allowable generic or linking claim.

Applicant timely traversed the restriction (election) requirement in the reply filed on 23 January 2009.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

#### ***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claims 1, 2, 4, and 5 are rejected under 35 U.S.C. 112, first paragraph, because the specification, does not reasonably provide enablement for "***illumination areas***" (claim 1, line 16).

The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

The claimed "***illumination areas***" is a purely functional recitation with no limitation of structure.

See Ex parte Miyazaki (BPAI Precedential 19 November 2008).

10. Claims 1, 2, 4, and 5 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Independent claim 1 recites the subject matter: "*a time integral value of a transmission factor for an overshoot-frame in which the transmission factor is changed due to the overshoot drive, is substantially equal to a time integral value of a transmission factor for a non-overshoot frame in which the transmission reaches a designated level and stays in a stable state*" (lines 21-25).

Dependent claim 2 recites the subject matter that "*a time integral value of an amount of light passing through the corresponding pixel while a display characteristic is changing is substantially identical to a time integral value of an amount of light passing through the corresponding pixel while the display characteristic is stable*" (lines 9-12).

The applicants contend, "*the paragraph bridging pages 9 and 10 of the specification, and lines 3-11 of page 14*" lend support for such subject matter.

However, on the contrary, these sections of the specification instead disclose, "*the time integral value of the transmission factor for the frame in which the display characteristic (transmission factor) changes due to the overshoot drive may be almost equal to the time integral value of the transmission factor for the frame in which the display characteristic (transmission factor) reaches a designated level and stays in a stable state.*"

For instance, the disclosed term "*almost equal*" indicates the first value is always less than the second value.

In contrast, the claimed term "*substantially equal*" indicates the first value may be equal to the second value (or perhaps even greater than the second value).

Such subject matter has not been described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

11. Claims 1, 2, 4, and 5 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.

The claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 1 recites the subject matter: "*a time integral value of a transmission factor for an overshoot-frame in which the transmission factor is changed due to the overshoot drive, is*

*substantially equal to a time integral value of a transmission factor for a non-overshoot frame in which the transmission reaches a designated level and stays in a stable state" (lines 21-25).*

The instant specification provides inadequate enabling guidance for calculating and/or deriving "*a time integral value of a transmission factor.*"

12. The remaining claims are rejected under 35 U.S.C. 112, first paragraph, as being dependent upon rejected base claims.

13. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

14. Claims 1, 2, 4, and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

15. Claim 1 recites the limitations "***drive means***" (line 8), "***means for supplying data***" (line 8), "***data emphasis means***" (line 11), and "***illumination control means***" (line 18). The lack of a grammatical article (such as "*a*" or "*a plurality of*" or "*the*" or "*said*") preceding the limitations renders it unclear whether the claim in each instance is establishing a new element; or instead referring back to some preestablished limitation.

For example, it would be unclear to an artisan whether a single "***means***" is being claimed; or rather whether a plurality of "***means***" are being claimed.

16. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

An omitted structural cooperative relationship results from the claimed subject matter: "*display data*" (line 8); "*data to be displayed*" (lines 8-9); "*new display data*" (line 11); "*previous display data*" (line 12); and "*designated display data*" (line 14). For example:

It would be unclear to one having ordinary skill in the art whether these limitations are intended to be identical to, or distinct from, one another.

An omitted structural cooperative relationship results from the claimed subject matter: "*a predetermined designated level*" (line 19) and "*a designated level*" (line 24). For example:

It would be unclear to one having ordinary skill in the art whether these limitations are intended to be identical to, or distinct from, one another.

17. Claim 1 recites the limitation "*the display data*" (line 10). There is insufficient antecedent basis for this limitation in the claim. For example:

It would be unclear to one having ordinary skill in the art whether this limitation is intended to refer to the earlier claimed "*display data*" (line 8) and/or "*data to be displayed*" (lines 8-9).

18. The term "***emphasizing***" in claim 1 (line 13) is a relative term which renders the claim indefinite. The term "***emphasizing***" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. For example:

It would be unclear to one having ordinary skill in the art whether this limitation whether this limitation is intended to refer to "***normal emphasis***," "***moderate emphasis***," "***excessive emphasis***," "***overdriving***," "***overshooting***," or something else entirely. The scope of this term is completely unclear.

19. Claim 1 recites the limitation "***the supplied data***" (line 15). There is insufficient antecedent basis for this limitation in the claim. For example:

It would be unclear to one having ordinary skill in the art whether this limitation is intended to refer to the earlier claimed "***display data***" (line 8); "***data to be displayed***" (lines 8-9); "***new display data***" (line 11); "***previous display data***" (line 12); and/or "***designated display data***" (line 14).

20. Claim 1 is amenable to two or more plausible claim constructions.  
The use of the phrase "***illumination areas***" (line 16) renders the claim indefinite.  
The claimed "***illumination areas***" is amenable to two plausible definitions.  
Based on the description provided in the Specification, "***illumination areas***" could be interpreted to mean:

- (a) Fluorescent back-light tubes.

(b) The front substrate of the display being illuminated by ambient room light.

Thus, neither the Specification, nor the claims, nor the ordinary meanings of the words provides any guidance as to what Applicant intends to cover with this claim language.

Due to the ambiguity as to what is intended by the claimed "***illumination areas***" and the fact that this claim element is amenable to two or more plausible claim constructions, this claim is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that the Applicant considers to be the invention.

See Ex parte Miyazaki (BPAI Precedential 19 November 2008).

21. Claim 1 is indefinite where it specifies "***a predetermined designated level***" (line 19), since "***predetermined***," according to applicant's definition, merely means "***determined beforehand***." For example, see Joseph E. Seagram & Sons, Inc. V. Marzall, Comr. Pats., 84 USPQ 180 (Court of Appeals, District of Columbia).

22. The term "***substantially equal***" in independent claim 1 (line 23) is a relative term which renders the claims indefinite.

The term "***substantially equal***" is not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

The applicants allege, "*As indicated at MPEP §2173.05(b), the term 'substantially' may very well be used in conjunction with another term to describe a particular characteristic of the claimed invention, and such terms are definite. As one very relevant example described in the*

*MPEP, the Court in Andrew Corp. v. Gabriel Electronics, 847 F.2d 819, 6 USPQ2d 2010 (Fed. Cir. 1988) ruled that the limitation 'which produces substantially equal E and H plane illumination patterns' was definite because one of ordinary skill in the art would know what was meant by 'substantially equal.' Likewise, Applicant respectfully submits that the term 'substantially identical' in the present application also is definite, since one of ordinary skill would know what such term means in context with Claims 1-20 and 24" (see Page 12 of the 'Amendment' filed 31 October 2007).*

However, MPEP §2173.05(b) states, "*The court held that the limitation 'to substantially increase the efficiency of the compound as a copper extractant' was definite in view of the general guidelines contained in the specification."*

In the instant case, no definite "general guidelines" are contained in the specification for the meaning of the term "substantially equal."

It would be unclear to one having ordinary skill in the art precisely how close to equal the claimed "time integral values" would need to be before qualifying as "substantially equal" values. Could the time integral values differ by ±1%? ±10%? ±50%?

Would the first time integral value always have to remain less than (i.e., "almost equal") the second time integral value? Such claim language renders the illumination control process of the instant invention vague and indefinite.

The Applicant also alleges, "*original claims 2, 3, 14 and 15, for example, explicitly recite the term 'substantially identical' with respect to applicant's 'time integral values'" (see page 15 of the Amendment filed on 17 April 2008).*

However, the examiner respectfully notes the instant application is a Continuation of 09/695,174. The original claims of 09/695,174 do not include the term "*substantially identical.*"

23. Claim 1 recites the limitation "***the transmission***" (line 24). There is insufficient antecedent basis for this limitation in the claim.

24. Claims 2, 4, and 5 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

An omitted structural cooperative relationship results from the claimed subject matter: "***A liquid crystal display apparatus***" (claim 1, line 1) and "***A liquid crystal display apparatus***" (claims 2, 4, 5, line 1). For example:

It would be unclear to one having ordinary skill in the art whether these limitations are intended to be identical to, or distinct from, one another.

25. The expression "***in case***" in claim 2 (line 2) renders it unclear whether or not any of the limitations following the expression are actually taking place.

26. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

An omitted structural cooperative relationship results from the claimed subject matter: "*individual pixels*" (claim 1, line 9) and "*a corresponding pixel*" (claim 2, line 4). For example:

It would be unclear to one having ordinary skill in the art whether these limitations are intended to be identical to, or distinct from, one another.

27. The term "*substantially identical*" in independent claim 2 (line 10) is a relative term which renders the claims indefinite.

The term "*substantially identical*" is not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

28. Claim 4 is indefinite where it specifies "*predefined*" (line 3), since "*predefined*," according to applicant's definition, merely means "*defined beforehand*." For example, see Joseph E. Seagram & Sons, Inc. V. Marzall, Comr. Pats., 84 USPQ 180 (Court of Appeals, District of Columbia).

29. Claim 4 recites the limitation "*after data conversion*" (line 5). There is insufficient antecedent basis for this limitation in the claim.

30. Claim 5 is indefinite where it specifies "*predefined*" (line 3), since "*predefined*," according to applicant's definition, merely means "*defined beforehand*." For example, see Joseph E. Seagram & Sons, Inc. V. Marzall, Comr. Pats., 84 USPQ 180 (Court of Appeals, District of Columbia).

31. Claim 5 recites the limitation "*after data conversion*" (line 5). There is insufficient antecedent basis for this limitation in the claim.

#### ***Response to Arguments***

32. Applicant's arguments filed 17 April 2008 have been fully considered but they are not persuasive.

Applicant's arguments with respect to claims 1, 2, 4, and 5 have been considered but are moot in view of the new ground(s) of rejection.

By such reasoning, rejection of the claims is deemed necessary, proper, and thereby maintained at this time.

#### ***Conclusion***

33. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The documents listed on the attached '*Notice of References Cited*' are cited to further evidence the state of the art pertaining to a liquid crystal display apparatuses.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (571)272-7678. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chanh Nguyen can be reached on (571) 272-7772. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeff Piziali/  
Primary Examiner, Art Unit 2629  
7 April 2009